



Official Mid-Hudson Valley Gem & Mineral Society, Inc. (MHVG&MS)

## 2021 Earth Science Scavenger Hunt Questionnaire

### \*\*\* "BIRTHSTONES" \*\*\*

**Please sign in at the Earth Science Table before you start answering the questionnaire!**

Name \_\_\_\_\_ School District \_\_\_\_\_

Teacher \_\_\_\_\_ Grade \_\_\_\_\_

*Instructions:* This scavenger hunt is designed so that you can find the answers easily. Each exhibit cube has the mineral's properties listed above it. Question numbers correspond to the number on each mineral exhibit cube. If you are unable to find a specific mineral cube, check the locator map at the Earth Science table.

The goal is to find the answers to earn extra school credit and to enjoy the gem & mineral show. 20 questions are to be completed for extra credit. In addition, if you fully complete the questionnaire, you will receive a gift.

#### Part 1 – Show Theme: "Birthstones"

**Go to the Special Exhibits (in the display cases in the Front of the show) on the show theme to help you answer the following questions.**

**1. Minerals are defined as: being a naturally occurring inorganic solid having a specific crystal structure and chemical composition.**

There are 2 months that have birthstones that are not technically minerals, sometimes they are called mineraloids. Which two months have non-minerals for birthstones?

**Month:** \_\_\_\_\_ **Mineraloid:** \_\_\_\_\_

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**3. Look at the Chemical Formulas- how many months have birth stones that are silicates? (Look for Si and O in the chemical formula) \_\_\_\_\_**

**4. December has 3 common birthstones- which one comes from Tanzania?**

\_\_\_\_\_ **What are the other two?** \_\_\_\_\_

**5. Which birthstone is the mineral of NY and what month does it represent?**

**Birthstone:** \_\_\_\_\_ **Month:** \_\_\_\_\_

**6. One month's birthstone chemistry is the most complicated of all the birthstones. It is?**

\_\_\_\_\_

**7. My birthstone(s) is \_\_\_\_\_ a new detail I didn't know? \_\_\_\_\_**

## Part 2 – Cubed Minerals

*Find the exhibit cubes (numbered) mentioned below. Read the properties and information about the mineral, and answer the questions below that correspond to that cube number.*

### Cube 1: Pyrite

Pyrite is known as Fool’s Gold. The metallic mineral pyrite, when struck with steel, will spark and emit a sulfurous odor. This mineral is used in the manufacture of \_\_\_\_\_.

### Cube 2: Calcite

Calcite, whose chemical name is Calcium Carbonate, reacts with acid in what way?  
\_\_\_\_\_.

### Cube 3: Talc

The Mohs scale measures the hardness of a mineral to being scratched. The scale ranges from 1 to 10. What number is Talc on the Mohs Scale? \_\_\_\_\_.

### Cube 4: Apatite

What is the chemical name of Apatite? \_\_\_\_\_.  
(Saying that ten times fast will surely work up an “appetite”!) What fossil animal parts are frequently found in phosphate deposits? \_\_\_\_\_.

### Cube 5: Kyanite

Is Kyanite a sedimentary, metamorphic, or igneous mineral? \_\_\_\_\_.

### Cube 6: Gypsum

Gypsum, which can be colored \_\_\_\_\_, has a streak that is white. This is part of what defines and identifies this mineral.

### Cube 7: Hematite

Hematite crystals come in a variety of forms—including thick to thin tabular, roses, botryoidal (resembling a bunch of grapes), micaceous (resembling mica), and earthy—but its crystal system is \_\_\_\_\_.

### Cube 8: Gold

Gold, whose chemical name is Native Gold because it is an element on the periodic table (like Sulfur—Cube 10), rarely combines with other elements. It is used for \_\_\_\_\_.

### Cube 9: Orthoclase

Orthoclase, potassium feldspar, is one of the major rock forming minerals in granite. Under short wave UV light, the mineral can fluoresce the following colors: \* \_\_\_\_\_  
\* \_\_\_\_\_ (You can see fluorescent and phosphorescent minerals at the Fluorescent Booth.)

**Cube 10: Sulphur/Sulfur**

During volcanic activity, bright yellow Sulfur precipitates directly from sulfur-rich gases. What type of acid can be made from sulfur? \_\_\_\_\_.

**Cube 11: Ulexite**

Ulexite is nicknamed \_\_\_\_\_ because its fibrous structure allows images and light to be transmitted through it.

**Cube 12: Halite**

Halite has a \_\_\_\_\_ taste. It is used for \_\_\_\_\_.

**Cube 13: Tourmaline**

Tourmaline and window glass fracture with the same pattern which is called \_\_\_\_\_.

**Cube 14: Sphalerite**

Sphalerite has an interesting property whereby it flashes orange when scratched or struck. What is this property called? \_\_\_\_\_.

**Cube 15: Beryl**

Specific gravity is a measurement of how heavy an object is relative to the weight of water. What is the specific gravity of Beryl? \_\_\_\_\_.

**Cube 16: Quartz**

The tip of Quartz crystals are terminated by hexagonal pyramids. The crystal structure is \_\_\_\_\_.

**Cube 17: Copper**

Copper's crystal system is isometric. Its crystals can be various shapes, including \_\_\_\_\_.

**Cube 18: Hornblende**

The cleavage angles of Hornblende are \_\_\_\_\_ and \_\_\_\_\_ degrees.

**Cube 19: Galena**

The chemical name of Galena is \_\_\_\_\_. Galena is the most important ore of Lead.

**Cube 20: Willemite**

Willemite, a zinc ore, is strongly fluorescent and phosphorescent. What color is created by using short-wave UV light? \_\_\_\_\_. (You can see fluorescent and phosphorescent minerals at the Fluorescent Booth.)

**Cube 21: Trilobite.** Trilobites were once widespread throughout the ancient oceans. How long ago 'did Trilobites become extinct? \_\_\_\_\_million years ago.

**Cube 22: Sodalite**

The chemical name of Sodalite is \_\_\_\_\_. Its crystal system is \_\_\_\_\_.

**Cube 23: Chalcopyrite**

Chalcopyrite has a \_\_\_\_\_ streak.

**Cube 24: Siderite**

In acid (HCl), Siderite \_\_\_\_\_.

**Cube 25: Malachite**

Malachite is a semi-precious gemstone. Is the gemstone opaque or transparent? \_\_\_\_\_.

**Cube 26: Stibnite**

Stibnite crystals are striated lengthwise and slightly flexible. The crystal system is \_\_\_\_\_.

**Cube 27: Horn Coral**

Corals make their own skeletons out of which mineral? \_\_\_\_\_.

**Cube 28: Cinnabar**

The chemical name of Cinnabar is \_\_\_\_\_.

**Cube 29: Fossil Hash**

Fossil hash forms in what kind of environment, marine (ocean), or terrestrial (land)?

\_\_\_\_\_.

**Cube 30: Barite**

Barite is the most common barium minerals. It is used for \_\_\_\_\_

\_\_\_\_\_.

**Cube 31: Muscovite**

Muscovite is a light-colored mica. Its chemical name is \_\_\_\_\_.

**Cube 32: Almandine Garnet**

Almandine Garnet is the New York State Gemstone. Its color is \_\_\_\_\_.

**Cube 33: Diopside**

Diopside has short prismatic crystals with good terminations. Its crystal system is \_\_\_\_\_.

**Cube 34: Fluorite**

Fluorite can be the following colors: \_\_\_\_\_.

**Cube 35: Diamond**

Diamond and **Graphite (Cube 40)** are both formed from pure carbon. Diamond is at the top of the Mohs hardness scale at \_\_\_\_\_.

**Cube 36: Wollastonite**

The crystal system of Wollastonite is \_\_\_\_\_.

**Cube 37: Magnetite/Lodestone**

Magnetite crystals are usually octahedrons, sometimes dodecahedrons with striations, cubic (rare), and also massive. Its crystal system is \_\_\_\_\_.

**Cube 38: Clam.**

Is a clam a bivalve, a brachiopod, a gastropod, or a cephalopod?

\_\_\_\_\_.

**Cube 39: Bornite**

Bornite, known as Peacock Ore, has a \_\_\_\_\_ luster.

**Cube 40: Graphite**

Graphite has a streak that is \_\_\_\_\_. It is mixed with clay and fired to be pencil "lead."

**Part 3 – Additional Questions**

A) What is your favorite mineral you saw at the SHOW?

Why \_\_\_\_\_

B) What is one aspect about a mineral, rock, or fossil SHOW you find very interesting?

\_\_\_\_\_

**CONGRATULATIONS!** You have completed the Earth Science Scavenger Hunt.  
Go to the Earth Science Table and have your questionnaire stamped with  
The Mid-Hudson Valley Gem & Mineral Society Stamp!.

**PLEASE TAKE TIME TO ENJOY THE GEM & MINERAL SHOW!**

*Place MHVG&MS stamp here:*

